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10/830,211	04/21/2004	Fei Ge	50277-2433	9360
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HICKMAN PALERMO TRUONG & BECKER/ORACLE			MORRISON, JAY A	
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SUITE 550			ART UNIT	PAPER NUMBER
SAN JOSE, CA 95110-1083			2168	
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			11/26/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/830,211	GE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	JAY A. MORRISON	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 August 2008.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-50 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-50 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Remarks***

1. Claims 1-50 are pending.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 47-48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. These claims disclose a system or apparatus but do not describe hardware which executes each of the claimed steps, which is required for a system claim to be statutory. Accordingly, these claims are rejected as non-statutory for failing to disclose such hardware.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 7-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Jagadish et al. ('Jagadish' hereinafter) ("TIMBER: A native XML database" by Jagadish et al., The VLDB Journal (2002), published online December 19, 2002.).

As per claim 1, Jagadish teaches

A method comprising the computer-implemented steps of: (see abstract)  
gathering statistics by a database server about nodes that are stored in a  
database repository that is managed by the database server; storing said statistics;  
(collecting data statistics, section 3.2, fifth paragraph)

wherein said nodes form a hierarchy; wherein each node is either an XML file or  
a container; (xml data stored in database retaining tree structure, section 1, fourth  
paragraph; note that the elements in xml data can be considered nodes within the xml  
hierarchy)

and in response to a request to the database server for access to one or more  
XML resources from said database repository, the database server computing a  
computational cost associated with each of two or more methods of accessing said one  
or more XML resources from said database repository, based on said statistics.  
(evaluation costs of different plans, section 6, second paragraph; using histograms for  
node count, section 6.2, third paragraph)

As per claim 2, Jagadish teaches

wherein the step of gathering statistics comprises gathering one or more data from a group consisting of a total number of nodes, in said hierarchy, that are accessible via a path through a specified node, a total number of containers, in said hierarchy, that are accessible via a path through said specified node, a total number of nodes, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said hierarchy that is immediately under a level of said specified node, a total number of containers, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said one or more hierarchies that is immediately under said level of said specified node, and a number of levels, from a root node of said hierarchy, at which said specified node is organized in said hierarchy.  
(section 6.2, third paragraph)

As per claim 3, Jagadish teaches  
and wherein the step of gathering statistics comprises gathering each of a total number of nodes, in said hierarchy, that are accessible via a path through a specified node, a total number of containers, in said hierarchy, that are accessible via a path through said specified node, a total number of nodes, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said hierarchy that is immediately under a level of said specified node, a total number of containers, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said one or more hierarchies that is immediately under said level of said specified node, and a number of levels, from a root node of said hierarchy,

at which said specified node is organized in said hierarchy. (section 6.2, third paragraph)

As per claim 7, Jagadish teaches

XML files of said nodes are XML resources, and the step of storing statistics comprises storing said statistics in a hierarchical index table in which said XML resources are indexed to said database repository. (section 3.2, first paragraph)

As per claim 8, Jagadish teaches

the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository. (page 279, second column, first paragraph)

As per claim 9, Jagadish teaches

XML files of said nodes are XML resources, and wherein each of said XML resources is stored, in association with a location of a node in said hierarchy, in a column of a table in said database repository, and wherein an operator contained in at least one of said one or more predicates is an operator that determines whether a particular XML resource can be located in said database repository through a particular specified path through a portion of said hierarchy. (page 281, first column, fourth paragraph)

As per claim 10, Jagadish teaches

XML files of said nodes are XML resources, and wherein each of said XML resources is stored, in association with a location of a node in said hierarchy, in a column of a table in said database repository, and wherein an operator contained in at least one of said one or more predicates is an operator that determines whether a particular XML resource can be located in said database repository at a terminal location of a particular specified path through a portion of said hierarchy. (page 281, first column, fourth paragraph)

As per claim 11, Jagadish teaches

XML files of said nodes are XML resources, and the step of computing a computational cost comprises computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository. (page 277, first column, second paragraph)

As per claim 12, Jagadish teaches

computing said computational cost of traversing an index comprises computing a computational cost associated with one or more CPUs used for said traversing. (page 281, first column, fourth paragraph)

As per claim 13, Jagadish teaches

computing said computational cost of traversing an index comprises computing a computational cost associated with reading data blocks in which portions of said index are stored. (section 7, second paragraph)

As per claim 14, Jagadish teaches

computing said computational cost of traversing an index comprises computing (a) a computational cost associated with one or more CPUs used for said traversing and (b) a computational cost associated with reading data blocks in which portions of said index are stored. (section 7, second paragraph)

As per claim 15, Jagadish teaches

the step of computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository. (page 279, second column, first paragraph)

As per claim 16, Jagadish teaches

said request for access to one or more XML resources from said database repository is a SQL query. (section 2, third paragraph)

As per claim 17, Jagadish teaches

XML files of said nodes are XML resources, and wherein each of said XML resources is stored in association with a location of a node in said hierarchy, in a column of a table in said database repository, and wherein said SQL query comprises a mechanism for providing at least one possible path through said hierarchy to each node of said XML resources. (page 281, first column, fourth paragraph)

As per claim 18, Jagadish teaches

the step of computing a computational cost comprises computing a computational cost component for one or more predicates, from said request, that contain an operator in conjunction with said mechanism acting on said database repository. (section 6.2, third paragraph)

As per claim 19, Jagadish teaches

XML files of said nodes are XML resources, and wherein each of said XML resources is stored, in association with a location of a node in the hierarchy, in a column of a table in said database repository, and wherein said SQL query comprises a mechanism for providing all possible paths through said hierarchy to each node of said XML resources. (page 279, second column, first paragraph)

As per claim 20, Jagadish teaches

the step of computing a computational cost comprises computing a computational cost component for one or more predicates, from said request, that contain an operator in conjunction with said mechanism acting on said database repository. (page 285, second column, second paragraph)

As per claim 21, Jagadish teaches  
said database repository is part of a relational database management system.  
(section 2, third paragraph)

As per claims 22-37,  
These claims are rejected on grounds corresponding to the arguments given above for rejected claims 1-16 and are similarly rejected.

As per claim 38, Jagadish teaches  
A method comprising the computer-implemented steps of: (see abstract)  
gathering, by a database management system, statistics about how many nodes that are stored in a repository of said database management system satisfy certain criteria; (collecting data statistics, section 3.2, fifth paragraph)  
wherein said nodes form a hierarchy; wherein each node is either an XML file or a container; wherein XML files of said nodes are XML resources; (xml data stored in database retaining tree structure, section 1, fourth paragraph; note that the elements in xml data can be considered nodes within the xml hierarchy)

storing said statistics in said database management system; and the database management system using the statistics to determine how to process a query that accesses one or more XML resources. (evaluation costs of different plans, section 6, second paragraph; using histograms for node count, section 6.2, third paragraph)

As per claim 39, Jagadish teaches

the step of storing comprises storing said statistics as an XML data type in a schema-based table in said database management system. (section 2, third paragraph)

As per claim 40, Jagadish teaches

wherein the step of gathering statistics comprises gathering each of a total number of nodes, in said hierarchy, that are accessible via a path through a specified node, a total number of containers, in said hierarchy, that are accessible via a path through said specified node, a total number of nodes, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said hierarchy that is immediately under a level of said specified node, a total number of containers, in said hierarchy, that are accessible via a path through said specified node and that are in a level of said hierarchy that is immediately under said level of said specified node. (section 6.2, third paragraph)

As per claim 41,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 38 and is similarly rejected.

As per claim 42, Jagadish teaches

A method comprising the computer-implemented steps of: (see abstract) in response to a request for access to one or more XML resources from a database repository within a database management system, accessing, from said database management system, statistics about a structure of a hierarchy associated with said one or more XML resources; (collecting data statistics, section 3.2, fifth paragraph)

wherein nodes form said hierarchy; wherein each node of said hierarchy is either an XML file or a container; (xml data stored in database retaining tree structure, section 1, fourth paragraph; note that the elements in xml data can be considered nodes within the xml hierarchy)

and computing a computational cost associated with each of two or more methods of accessing said one or more XML resources from said database repository, based on said statistics. (evaluation costs of different plans, section 6, second paragraph; using histograms for node count, section 6.2, third paragraph)

As per claim 43, Jagadish teaches

the step of computing a computational cost comprises computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository. (page 285, second column, second paragraph)

As per claim 44, Jagadish teaches

XML files of said nodes are XML resources, and the step of computing a computational cost comprises computing a computational cost of traversing, to locate particular XML resources specified in said request, an index in which said XML resources are indexed to said database repository. (section 3.3, third paragraph)

As per claim 45, Jagadish teaches

XML files of said nodes are XML resources, and the step of computing a computational cost comprises (a) computing a selectivity value for each of one or more predicates, from said request, that contain operators on said database repository and (b) computing a computational cost of traversing, to locate a particular XML resource specified in said request, an index in which said XML resources are indexed to said database repository. (page 279, second column, first paragraph)

As per claim 46,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 42 and is similarly rejected.

As per claim 47, Jagadish teaches

A database system comprising: (see abstract)

an XML data repository within a relational database management system; (native XML database, section 1, fourth paragraph)

and a query optimizer that is executing on one or more processors, wherein the query optimizer is configured to receive a database query and, in response to said database query, formulate a query execution plan based on computational costs of access paths associated with XML data stored in said repository, (collecting data statistics, section 3.2, fifth paragraph)

wherein said computational costs are based on statistics characterizing an organizational structure of nodes under each of one or more particular paths of an organization structure of said XML data; (evaluation costs of different plans, section 6, second paragraph; using histograms for node count, section 6.2, third paragraph)

wherein said nodes form a hierarchy; wherein each node is either an XML file or a container. (xml data stored in database retaining tree structure, section 1, fourth paragraph; note that the elements in xml data can be considered nodes within the xml hierarchy)

As per claim 48,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected.

As per claim 49, Jagadish teaches

wherein the step of gathering statistics comprises gathering statistics about a median depth of a plurality of paths to a plurality of nodes in said hierarchy, and wherein the plurality of nodes are accessible via a path through a specified node. (page 281, first column, fourth paragraph)

As per claim 50, Jagadish teaches

wherein the step of gathering statistics comprises gathering statistics about a maximum depth of a plurality of paths to a plurality of nodes in said hierarchy, and wherein the plurality of nodes are accessible via a path through a specified node. (page 281, first column, fourth paragraph)

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagadish et al. ('Jagadish' hereinafter) ("TIMBER: A native XML database" by Jagadish et al., The VLDB Journal (2002), published online December 19, 2002.) in view of Michel et al. ('Michel' hereinafter) (Patent Number 7,113,936).

As per claim 4,

Jagadish does not explicitly indicate "the step of storing statistics comprises storing said statistics in a relational table of a database of which said database repository is part".

However, Michel discloses “the step of storing statistics comprises storing said statistics in a relational table of a database of which said database repository is part” (column 14, lines 38-45)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Jagadish and Michel because using the steps of “the step of storing statistics comprises storing said statistics in a relational table of a database of which said database repository is part” would have given those skilled in the art the tools to improve the invention by utilizing an efficient technique for use in storing large amounts of data, such as statistics. This gives the user the advantage of more efficient use of resources and faster access times.

As per claim 5, Jagadish teaches

XML files of said nodes are XML resources, and said relational table is a first relational table that is a different table than a second relational table in which said XML resources are stored in said database repository. (section 2, third paragraph)

As per claim 6, Jagadish teaches

said relational table is a relational table in which said XML resources are stored in said database repository. (section 2, third paragraph)

***Response to Arguments***

8. Applicant's arguments filed 8/27/2008 with respect to the 35 USC 101 rejections of claims 47-48 have been fully considered but they are not persuasive. It is respectfully submitted that the amendments adding processors does not overcome the rejections because the processors could be considered software elements which execute the processing. Therefore the rejection is maintained.

9. Applicant's remaining arguments with respect to claims 1-50 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tim T. Vo/  
Supervisory Patent Examiner, Art Unit 2168

Jay Morrison

Tim Vo

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